STATE OF MISSOURI

DEPARTMENT OF NATURAL RESOURCES

MISSOURI CLEAN WATER COMMISSION

MISSOURI STATE OPERATING PERMIT

GENERAL PERMIT

In compliance with the Missouri Clean Water Law, (Chapter 644 R.S. Mo. as amended, hereinafter, the Law), and the Federal Water Pollution Control Act (Public Law 92-500, 92nd Congress) as amended,

Permit No.	MO-G641000
Owner:	< name >
Address:	< address >
Continuing Authority:	< name, or Same as above >
Address:	< address, or Same as above >
Facility Name:	< name >
Facility Address:	< physical address >
Legal Description:	¼, ¼, ¼, Sec. xx, TxxN, RxxW, < county > County
UTM Coordinates:	X = ,Y =
Receiving Stream:	< receiving stream > < (C, P, L1, L2, L3) >
First Classified Stream and ID:	< 1st classified stream > <(C, P, etc.)> <(ID number)>
USGS Basin & Sub-watershed No.:	< (USGS HUC 12 #) >

is authorized to discharge from the facility described herein, in accordance with the effluent limitations and monitoring requirements as set forth herein:

FACILITY DESCRIPTION

All Outfalls (SIC code 4941)
Discharges of backwash water from potable water supply water softening units and Zeolite filter backwash discharges

This permit authorizes only wastewater discharges under the Missouri Clean Water Law and the National Pollutant Discharge Elimination System; it does not apply to other regulated areas. This permit may be appealed in accordance with Section 621.250 RSMo, Section 640.013 RSMo and Section 644.051.6 of the Law.

August 8, 2018
Effective Date

Edward B. Galbraith, Director, Division of Environmental Quality

August 7, 2023
Expiration Date

Chris Wieberg, Director, Water Protection Program

APPLICABILITY

1. This Missouri State Operating Permit (permit) authorizes the discharge of backwash water from potable water system water softening units including, but not limited to, facilities with the primary SIC Code 4941, facilities using Zeolite filters, or facilities that the Missouri Department of Natural Resources (Department) determines are fundamentally similar to facilities under the above SIC Code.

2. The Department may require any facility authorized by a general permit to apply for a site-specific permit [10 CSR 20-6.010(13)(C)]. Cases where a site-specific permit may be required include, but are not limited to, the following:
    a. The discharge(s) is a significant contributor of a pollutant(s) which impairs the beneficial uses of the receiving stream;
    b. The discharger is not in compliance with the conditions of the general permit;
    c. A Total Maximum Daily Load (TMDL) containing requirements applicable to the discharge(s) is approved.

3. Facilities covered under a current general permit who desire to apply for a site-specific permit may do so by contacting the Department for application requirements and procedures.

4. Facilities covered under a current site-specific permit who desire to apply for inclusion under this general permit may contact the Department for application requirements and procedures.

5. This permit does not apply to the discharge of any water other than the water softener and Zeolite filter backwash water.

6. Discharges to the watersheds of a Metropolitan No-Discharge Stream (10 CSR 20-7.031 Table F) is prohibited except uncontaminated cooling water, non-contaminated stormwater flows, permitted stormwater discharges in compliance with permit conditions, and excess wet-weather bypass discharges not interfering with beneficial uses per 10 CSR 20-7.015(5) and 7.031(7). Existing interim discharges may be allowed until interceptors are available within 2,000 feet or a distance deems feasible by the Department, or unless construction of outfalls to alternative receiving waters not listed in Table F is deemed feasibly by the Department.

7. No facility shall be located in a way to allow water to be released into sinkholes, caves, fissures, or other openings in the ground that could drain into aquifers directly or indirectly (except losing streams) per 10 CSR 20-7.015(7).

8. Discharges to losing streams from industrial sources that treat influents containing significant amounts of organic loading shall apply for a site-specific permit to comply with the limitations found in 10 CSR 20-7.015(4).

9. This general permit does not authorize discharges within 100 feet up gradient or upstream of any well or water supply structure, such as an intake, within a water designated for drinking water supply as defined in 10 CSR 20-7.031.

10. For facilities within the watershed of an Outstanding National Resource Water which includes the Ozark National Scenic Riverways and the National Wild and Scenic Rivers System, or directly to an Outstanding State Resource Water, this permit:
    a. Authorizes no-discharge facilities [as defined in 10 CSR 20-6.015(1)(B)7.] to operate. Any discharge from a no-discharge facility will be considered a violation of this permit unless a catastrophic or chronic storm event [as defined in 10 CSR 20-6.015(1)(B)] occurs. In the event of a catastrophic or chronic storm event, the no-discharge facility is authorized to release only the amount of stormwater required to prevent damage to the facility or established Best Management Practices (BMPs).
    b. Does not authorize the discharge of process wastewater directly to or within the watershed of an Outstanding National Resource Water per 10 CSR 20-7.015(6)(A)3.

11. Any facility located within two (2) miles of losing streams, sinkholes and/or direct conduits to groundwater must be operated in a no-discharge manner in accordance with 10 CSR 20 6.015(1)(B)(7). Any new facility that plans to operate within an ONRW watershed or within two (2) miles of losing streams, sinkholes or other direct conduits to groundwater must include an engineering report sealed by a professional engineer licensed in the state of Missouri when submitting an application for this permit. The engineering report must demonstrate the facility is capable of operating as a no-discharge facility. The engineering report will also provide details of water usage and methods of land application.

12. Facilities that are located within the watershed of an impaired water as designated on the 305(b) Report must be evaluated on a case-by-case basis for inclusion under this permit. Missouri's impaired waters can be found at www.dnr.mo.gov/env/wpp/waterquality/index.html. Facilities that are found to be discharging the listed pollutant(s) of concern for any impaired water may be required to obtain a site-specific permit.

13. This general permit does not affect, remove, or replace any requirement of the Endangered Species Act; the National Historic Preservation Act; the Comprehensive Environmental Response, Compensation and Liability Act; or the Resource Conservation and Recovery Act. Determination of applicability to the above mentioned acts is the responsibility of the permittee.

14. The requirements of this permit neither supersede nor remove liability from compliance with federal, state, county, and other local requirements or ordinances.

EXEMPTIONS

1. Facilities that discharge directly to a publicly owned treatment works that has consented to receiving such a discharge are exempt from permit requirements. This permit does not grant permission to use publicly or privately owned sewers or conveyances. The discharger is responsible for obtaining permission from the appropriate entity for such use.

EFFLUENT LIMITATIONS AND MONTIROING REQUIREMENTS

TABLE A **FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS**

The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. These final effluent limitations shall become effective upon permit issuance and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:

EFFLUENT PARAMETER(S)	UNITS	EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
Flow	MGD	*		*	once/quarter	24 hr. estimate
Chloride	mg/L	557		277	once/quarter	grab
Chlorides + Sulfate	mg/L	1000		1000	once/quarter	grab
Settleable Solids	mL/L	1.5		1.0	once/quarter	grab
Copper, Total Recoverable	mg/L	0.022		0.011	once/quarter	grab
Lead, Total Recoverable	mg/L	0.01		0.005	once/quarter	grab
pH – Units**	SU	6.5 – 9.0		6.5 – 9.0	once/quarter	grab

MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY VIA THE DEPARTMENT'S EDMR SYSTEM. SHOULD A WAIVER TO EDMR BE GRANTED BY THE DEPARTMENT, PAPER REPORTS SHALL BE SUBMITTED IN A TIMELY MANNER TO THE APPROPRIATE REGIONAL OFFICE. THE FIRST REPORT IS DUE DATE. IT IS A VIOLATION OF THIS PERMIT TO FAIL TO SAMPLE.

* Monitoring requirement only.
** pH is measured in pH units and is not to be averaged.

REQUIREMENTS

1. Electronic Discharge Monitoring Report (eDMR) Submission System. Per 40 CFR Part 127 National Pollutant Discharge Elimination System (NPDES) Electronic Reporting Rule, reporting of effluent limits and monitoring shall be submitted by the permittee via an electronic system to ensure timely, complete, accurate, and nationally-consistent set of data about the NPDES program. All general permit covered facilities under this master general permit that have required discharge monitoring and reporting shall comply with the Department's requirements for electronic reporting.
    a. Discharge Monitoring Reporting Requirements.

i. Registration to participate in the Department's eDMR system is required as part of the application for general permit coverage in order to constitute a complete permit application and may be accessed at dnr.mo.gov/env/wpp/edmr.htm.
ii. The permittee must electronically submit compliance monitoring data via the eDMR system. In regards to Standard Conditions Part I, Section B, 7, the eDMR system is currently the only Department approved reporting method for this permit.

b. Other actions. The following shall be submitted electronically after such a system has been made available by the Department:
i. General Permit Applications/Notices of Intent to discharge (NOIs);
ii. Notices of Termination (NOTs);
iii. No Exposure Certifications (NOEs); and
iv. Low Erosivity Waivers and Other Waivers from Stormwater Controls (LEWs).

c. Electronic Submissions. To access the eDMR system, use the following link in your web browser: https://edmr.dnr.mo.gov/edmr/E2/Shared/Pages/Main/Login.aspx.

d. Waivers from Electronic Reporting.
i. The permittee must electronically submit compliance monitoring data and reports unless a waiver is granted by the Department in compliance with 40 CFR Part 127.
ii. The permittee may obtain a temporary or permanent electronic reporting waiver by first submitting an eDMR Waiver Request Form (Form 780-2692): http://dnr.mo.gov/forms/780-2692-f.pdf, by contacting the appropriate permitting office, or emailing edmr@dnr.mo.gov. The Department will either approve or deny this electronic reporting waiver request within 120 calendar days of receipt.
iii. Only permittees with an approved waiver request may submit monitoring data and reports on paper to the Department for the period that the approved electronic reporting waiver is effective.

2. All Outfalls must be:
a. Clearly marked in the field. On classified waters the outfall signs must be clearly visible from land and water perspectives;
b. Free of weeds, brush or obstructive vegetation;
c. Above the normal high water mark of the waterbody to which it discharges; and
d. Maintained so that a sample of the discharge can be obtained at a point after the final treatment process and before the discharge mixes with receiving waters.

3. The results of all samples from a discharge covered by this permit that are collected and analyzed must be retained on site for a period of five (5) years and made available to the Department upon request.

4. The discharge shall not contain floating solids or visible foam in other than trace amounts.

5. Good housekeeping practices shall be maintained on the site to keep solid waste from entry into waters of the state.

6. Report as no discharge when a discharge does not occur during the report period.

7. It is a violation of the Missouri Clean Water Law to fail to pay fees associated with this permit (644.055, RSMo) the fees can be found at 10 CSR 20-6.011.

8. Compliance with all requirements in this permit does not supersede nor remove liability for compliance with county and other local requirements or ordinances.

9. This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, termination or notice of planned changes or anticipated non-compliance does not stay any permit condition.

10. The permittee shall give notice to the Department as soon as possible of any planned physical alterations or additions to the permitted facility when:
a. The alteration or addition could significantly change the nature or increase the quantity of pollutants. This notification applies to pollutants subject to the effluent limitations of this permit as well as new pollutants that are different from pollutants listed in this permit; or
b. The alteration or addition results in a significant change in disposal practices and may justify the application of permit conditions that are different from or absent in the current permit.

STANDARD CONDITIONS

1. In addition to specified conditions stated herein, this permit is subject to the attached Standard Conditions Part I, dated August 1, 2014, and hereby incorporated as though fully set forth herein.

SPECIAL CONDITIONS

1. The full implementation of this operating permit, which includes implementation of any applicable schedules of compliance, shall constitute compliance with all applicable federal and state statutes and regulations in accordance with §644.051.16, RSMo, and the CWA section 402(k); however, this permit may be reopened and modified, or alternatively revoked and reissued to comply with any applicable effluent standard or limitation issued or approved under Sections 301(b)(2)(C) and (D), 304(b)(2), and 307(a) (2) of the Clean Water Act, if the effluent standard or limitation so issued or approved:
    a. Contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or
    b. Controls any pollutant not limited in the permit.

2. This permit may be reopened and modified, or alternatively revoked and reissued, to:
    a. Incorporate new or modified effluent limitations or other conditions if the results of a waste load allocation study, toxicity test, or other information indicates changes are necessary to assure compliance with Missouri Water Quality Standards.
    b. Incorporate new or modified effluent limitations or other conditions if, as the result of a watershed analysis, a Total Maximum Daily Load (TMDL) limitation is developed for the receiving waters which are currently included in Missouri's current 303(d) list.

3. Changes in Discharges of Toxic Substances. In addition to the reporting requirements under §122.41(1), all existing manufacturing, commercial, mining, and silvicultural dischargers must notify the Director as soon as they know or have reason to believe:
    a. That an activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following notification levels:
        i. One hundred micrograms per liter (100 µg/L);
        ii. Two hundred micrograms per liter (200 µg/L) for acrolein and acrylonitrile;
        iii. Five hundred micrograms per liter (500 µg/L) for 2,4-dinitrophenol and for 2-methyl-4, 6-dinitrophenol;
        iv. One milligram per liter (1 mg/L) for antimony;
        v. Five (5) times the maximum concentration value reported for the pollutant in the permit application in accordance with 40 CFR 122.21(g)(7); or
        vi. The notification level established by the Department in accordance with 40 CFR 122.44(f).
    b. That any activity has occurred or will occur which would result in any discharge, on a non-routine or infrequent basis, of a toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels:"
        vii. Five hundred micrograms per liter (500 µg/l);
        viii. One milligram per liter (1 mg/l) for antimony;
        ix. Ten (10) times the maximum concentration value reported for that pollutant in the permit application in accordance with §122.21(g)(7).
        x. The level established by the Director in accordance with §122.44(f).

PERMIT RENEWAL

1. Unless terminated, the permittee shall submit an application for the renewal of this permit by submitting *Form E-Application for General Permit* http://dnr.mo.gov/forms/780-0795-f.pdf no later than thirty (30) days prior to the permit's expiration date if they wish to continue an activity regulated by this permit after permit expiration.

2. When a facility submits a timely and complete application in accordance with 10 CSR 20-6.010(5)(B), and (10)(E)1, as well as §644.051.10 RSMo 2015, and if the Department is unable through no fault of the permittee to issue a renewal prior to expiration of the previous permit, the terms and conditions of the expired permit are administratively continued and will remain fully effective and enforceable until such time when a permit action is taken. Failure to submit a renewal application for a facility that is still in operation is a violation of the Missouri Clean Water Law. Failure to apply for renewal of a permit may result in termination of this permit and enforcement action to compel compliance with this condition and the Missouri Clean Water Law.

3. As part of the complete application and as required by the federal NPDES eReporting rule, participation in the Department's Electronic Discharge Monitoring Report Submission System (eDMR) will be required. Facilities already participating in eDMR need not re-apply upon renewal. More information can be found at: http://dnr.mo.gov/env/wpp/edmr.htm.

PERMIT TRANSFER

1. This permit may not be transferred to a new owner in any fashion except by submitting an *Application for Transfer of Operating Permit* http://dnr.mo.gov/forms/780-1517-f.pdf signed by the seller and buyer of the facility along with the appropriate modification fee. In some cases, revocation and reissuance may be necessary. Standard Condition Part 1, Subsection D.7 applies.

2. Facilities with transfers carried out without prior notice to the Department will be considered to be operating without a permit and may be assessed an administrative penalty.

TERMINATION

1. The permittee shall apply for permit termination when activities covered by this permit have ceased and no significant materials as defined by 10 CSR 20-6.200(1)(C)27. remain on the property or if on the property are stored in such a way as to have no potential for pollution. Whenever a release or a potential for release from a permitted facility is permanently eliminated, the existing permit may be terminated.

2. Proper closure of any storage structure is required prior to permit termination.

3. In order to terminate this permit, the permittee shall notify the Department's appropriate regional office by completing and submitting *Request for Termination of Operating Permit* http://dnr.mo.gov/forms/780-1409-f.pdf. The Department may require inspection of the premises prior to granting termination of a permit.

MISSOURI DEPARTMENT OF NATURAL RESOURCES
FACT SHEET
FOR THE PURPOSE OF MODIFICATION OF
MOG641000
MASTER GENERAL PERMIT
FOR POTABLE WATER SUPPLY WATER SOFTENING UNITS, AND ZEOLITE FILTER BACKWASH DISCHARGES

The Federal Water Pollution Control Act ("Clean Water Act" Section 402 Public Law 92-500 as amended) established the National Pollution Discharge Elimination System (NPDES) permit program. This program regulates the discharge of pollutants from point sources into the waters of the United States, and the release of storm water from certain point sources. All such discharges are unlawful without a permit (Section 301 of the "Clean Water Act"). After a permit is obtained, a discharge not in compliance with all permit terms and conditions is unlawful. Missouri State Operating Permits (MSOPs) are issued by the Director of the Missouri Department of Natural Resources (Department) under an approved program, operating in accordance with federal and state laws (Federal "Clean Water Act" and "Missouri Clean Water Law" Section 644 as amended). MSOPs are issued for a period of five (5) years unless otherwise specified.

As per 40 CFR Part 124.8(a) and 10 CSR 20-6.020(1)2. a Factsheet shall be prepared to give pertinent information regarding the applicable regulations, rationale for the development of effluent limitations and conditions, and the public participation process for the Missouri State Operating Permit (operating permit) listed below.

A Factsheet is not an enforceable part of an operating permit.

Part I – Facility Information

Facility Type: Industrial
Facility SIC Code(s): 4941
Facility Description: Discharges of backwash water from potable water supply water softening units using Zeolite filters.

CHANGES:

- Changes to this permit include the added requirement for electronic reporting per 40 CFR Part 127 National Pollutant Discharge Elimination System (NPDES) Electronic Reporting Rule, which states that "reporting of effluent limits and monitoring shall be submitted by the permittee via an electronic system to ensure timely, complete, accurate, and nationally-consistent set of data about the NPDES program." All general covered permitted facilities under this master general permit must comply with the Department's requirements for electronic reporting if their permit contains reporting requirements. A registration in the eDMR system is required as part of the application for general permit coverage in order to constitute a complete permit application (unless the facility is already participating in eDMR). The application may be accessed at: http://dnr.mo.gov/env/wpp/edmr.htm. A facility may, under certain circumstances, apply for a temporary or permanent waiver from electronic reporting by submitting eDMR Waiver Request form (Form 780-2692, http://dnr.mo.gov/forms/780-2692-f.pdf) to the appropriate permitting office. Once notified that your application has been processed, you may access the eDMR system using the following link: https://edmr.dnr.mo.gov/edmr/E2/Shared/Pages/Main/Login.aspx.
- Other changes include the general restructuring of the permit to match current departmental templates and the use of the most up-to-date language available for use by the Department.

CLARIFICATION:
This permit is for filter backwash from zeolite systems and water softeners only. Although the backwash is related to potable water systems, this permit does not regulate the production or distribution of drinking water. The permittee is expected to obtain all permits and fulfill all requirements pertinent to drinking water systems in addition to this permit.

Part II – Operator Certification Requirements

☒ Not Applicable: This facility is not required to have a certified wastewater operator. Please see 10 CSR 60-14 for drinking water operator requirements.

Part III – Receiving Stream Information

10 CSR 20-7.031 Missouri Water Quality Standards, the Department defines the Clean Water Commission water quality objectives in terms of "water uses to be maintained and the criteria to protect those uses." The receiving stream and/or 1st classified receiving stream's beneficial water uses are to be maintained.

A full description of the receiving stream shall appear on the coverage document issued to a General Permit Covered Facility.

APPLICABLE DESIGNATIONS OF WATERS OF THE STATE:
As per Missouri's Effluent Regulations [10 CSR 20-7.015], the waters of the state are divided into the below listed seven (7) categories. Each category lists effluent limitations for specific parameters, which are presented in each outfall's Effluent Limitation Table and further discussed in the Derivation & Discussion of Limits section.

Missouri or Mississippi River [10 CSR 20-7.015(2)]: ☒
Lake or Reservoir [10 CSR 20-7.015(3)]: ☒
Losing [10 CSR 20-7.015(4)]: ☒
Metropolitan No-Discharge [10 CSR 20-7.015(5)]: ☐
Special Stream [10 CSR 20-7.015(6)]: ☒
Subsurface Water [10 CSR 20-7.015(7)]: ☐
All Other Waters [10 CSR 20-7.015(8)]: ☒

Part IV – Rationale and Derivation of Effluent Limitations & Permit Conditions

ANTI-BACKSLIDING:
A provision in the Federal Regulations [CWA §303(d)(4); CWA §402(c); 40 CFR Part 122.44(I)] that requires a reissued permit to be as stringent as the previous permit with some exceptions.

☒ Not Applicable: Limitations in this modified operating permit conform to the anti-backsliding provisions of Section 402(o) of the Clean Water Act, and 40 CFR Part 122.44. All limits in this operating permit are at least as protective as those previously established; therefore, backsliding does not apply.

ANTIDEGRADATION:
Antidegradation policies ensure protection of water quality for a particular water body on a pollutant by pollutant basis to ensure Water Quality Standards are maintained to support beneficial uses such as fish and wildlife propagation and recreation on and in the water. This also includes special protection of waters designated as Outstanding National Resource Waters and Outstanding State Resource Waters [10 CSR 20-7.031(3)(C)]. Antidegradation policies are adopted to minimize adverse effects on water.

☒ Applicable: The pollutants of concern in this permit are Chloride, Chloride + Sulfate, Total Recoverable Copper, Total Recoverable Lead, Settleable Solids, and pH variations. Compliance with the effluent limitations established in this permit for the protection of General and Specific Criteria is expected to be protective of water quality and meets the requirements of Missouri's Antidegradation Review [10 CSR 20-7.031(3), 10 CSR 20-7.031 Table A, and 10 CSR 20-7.015(9)(A)5.].

REASONABLE POTENTIAL ANALYSIS (RPA):
Federal regulation 40 CFR Part 122.44(d)(1)(i) requires effluent limitations for all pollutants that are or may be discharged at a level that will cause or have the reasonable potential to cause or contribute to an in-stream excursion above narrative or numeric water quality standard. In accordance with 40 CFR Part 122.44(d)(iii) if the permit writer determines that any given pollutant has the reasonable potential to cause, or contribute to an in-stream excursion above the WQS, the permit must contain effluent limits for that pollutant.

☒ Conservative assumption: A Reasonable Potential Analysis was not conducted for this master general permit; however, staff did conduct a reasonable potential determination. A reasonable potential to violate water quality standards is assumed for the pollutants of concern due to the nature of the activities carried out under this permit, resulting in the effluent limits contained in the permit.

(a) Water Quality Standards. To the extent required by law, discharges to waters of the state shall not cause a violation of Missouri Water Quality Standards (10 CSR 20-7.031), including both specific and general criteria.

(b) General Criteria. The following water quality criteria shall be applicable to all waters of the state at all times, including mixing zones. No water contaminant, by itself or in combination with other substances, shall prevent the waters of the state from meeting the following conditions:

(1) Waters shall be free from substances in sufficient amounts to cause the formation of putrescent, unsightly or harmful bottom deposits, or prevent full maintenance of beneficial uses.

The Department has determined that there is reasonable potential for activities covered under this general permit to contribute to putrescent, unsightly, or harmful bottom deposits that may prevent full maintenance of beneficial uses in receiving streams. For this reason, the Department has assigned effluent limits for Settleable Solids for facilities under this general permit. The Department has determined that the effluent limits for this pollutant are sufficient to protect water quality standards general criteria.

(2) Waters shall be free from oil, scum, and floating debris in sufficient amounts to be unsightly or prevent full maintenance of beneficial uses.

The Department has determined that there is no reasonable potential for activities covered under this general permit to cause oil, scum or floating debris in waters of the state.

(3) Waters shall be free from substances in sufficient amounts to cause unsightly color or turbidity, offensive odor, or prevent full maintenance of beneficial uses.

The Department has determined that there is no reasonable potential for activities covered under this general permit to contribute contaminants that could cause unsightly color or turbidity, offensive odor or prevent full maintenance of beneficial uses.

(4) Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal, or aquatic life.

The Department has determined that there is a reasonable potential for activities covered under this general permit to contribute contaminants that could cause toxicity to human, animal or aquatic life. This has been addressed by assigning effluent limits for pH, Chloride, Chloride + Sulfate, Copper, and Lead. The Department has determined that the effluent limits for these pollutants are sufficient to protect water quality standards general criteria.

(5) There shall be no significant human health hazard from incidental contact with the water.

The Department has determined that there is a reasonable potential for activities covered under this general permit to contribute contaminants that could cause significant human health hazard from incidental contact with the water. This has been addressed by assigning effluent limits for pH, Chloride, Chloride + Sulfate, Copper, and Lead. The Department has determined that the effluent limits for these pollutants are sufficient to protect water quality standards general criteria.

(6) There shall be no acute toxicity to livestock or wildlife watering.

The Department has determined that there is a reasonable potential for activities covered under this general permit to contribute contaminants that could cause acute toxicity to livestock and wildlife watering. This has been addressed by assigning effluent limits for pH, Chloride, Chloride + Sulfate, Copper, and Lead. The Department has determined that the effluent limits for these pollutants are sufficient to protect water quality standards general criteria.

(7) Waters shall be free from physical, chemical, or hydrologic changes that would impair the natural biological community.

The Department has determined that there is a reasonable potential for activities covered under this general permit to contribute contaminants that could cause physical, chemical, or hydrologic changes that would impair the natural biological community. This has been addressed by assigning effluent limits for pH, Chloride, Chloride + Sulfate, Copper, and Lead. The Department has determined that the effluent limits for these pollutants are sufficient to protect water quality standards general criteria.

(8) Waters shall be free from used tires, car bodies, appliances, demolition debris, used vehicles or equipment, and solid waste as defined in Missouri's Solid Waste Law, Section 260.200, RSMo, except as the use of such materials is specifically permitted pursuant to Section 260.200-260.247, RSMo.

Based on the activities carried out by the facilities under this general permit, the Department has determined there is no reasonable potential for the deposition of used tires, car bodies, appliances, demolition debris, used vehicles or equipment or solid waste into waters of the state.

SCHEDULE OF COMPLIANCE (SOC):

Per § 644.051, RSMo, a permit may be issued with a Schedule of Compliance (SOC) to provide time for a facility to come into compliance with new state or federal effluent regulations, water quality standards, or other requirements. Such a schedule is not allowed if the facility is already in compliance with the new requirement, or if prohibited by other statute or regulation. An SOC includes an enforceable sequence of interim requirements (actions, operations, or milestone events) leading to compliance with the Missouri Clean Water Law, its implementing regulations, and/or the terms and conditions of an operating permit. *See also* Section 502 (17) of the Clean Water Act, and 40 CFR§ 122.2. For new effluent limitations, the permit includes interim monitoring for the specific parameter to demonstrate the facility is not already in compliance with the new requirement. Per 40 CFR § 122.47(a)(1) and 10 CSR 20-7.031(11), compliance must occur as soon as possible. If the permit provides a schedule for meeting new water quality based effluent limits, an SOC must include an enforceable, final effluent limitation in the permit even if the SOC extends beyond the life of the permit.

☒ Not Applicable: This permit does not contain an SOC.

SETBACKS:

Setbacks are common elements of permits and are established to provide a margin of safety in order to protect the receiving water from accidents, spills, unusual events, etc. Setback distances have changed from the previous permit as a direct reference to the Department's regulations in 10 CSR 20-6 and 20-7. Setbacks from losing streams, sinkholes and direct conduits to groundwater have been retained due to the presence of Technically Enhanced Naturally Occurring Radioactive Material (TENORM) in some facilities covered under this permit. Further discussion of TENORM can be found on beginning on page 6 of this fact sheet under the heading of Radioactive Material.

STORM WATER POLLUTION PREVENTION PLAN (SWPPP):
In accordance with 40 CFR 122.44(k) *Best Management Practices (BMPs)* to control or abate the discharge of pollutants when: (1) authorized under section 304(e) of the Clean Water Act (CWA) for the control of toxic pollutants and hazardous substances from ancillary industrial activities; (2) authorized under section 402(p) of the CWA for the control of stormwater discharges; (3) numeric effluent limitations are infeasible; or (4) the practices are reasonably necessary to achieve effluent limitations and standards or to carry out the purposes and intent of the CWA.

In accordance with the EPA's *Developing Your Stormwater Prevention Plan, A Guide for Industrial Operators* (Document number EPA 833-B-09-002) [published by the United States Environmental Protection Agency (USEPA) in February 2009], BMPs are measures or practices used to reduce the amount of pollution entering (regarding this operating permit) waters of the state. BMPs may take the form of a process, activity or physical structure.

Additionally in accordance with stormwater management, an SWPPP is a series of steps and activities to (1) identify sources of pollution or contamination, and (2) select and carry out actions which prevent or control the pollution of stormwater discharges.

☒ Not Applicable: At this time, the permittee is not required to develop and implement a SWPPP.

VARIANCE:
Per the Missouri Clean Water Law Section 644.061.4, variances shall be granted for such period of time and under such terms and conditions as shall be specified by the commission in its order. The variance may be extended by affirmative action of the commission. In no event shall the variance be granted for a period of time greater than is reasonably necessary for complying with the Missouri Clean Water Law Section 644.006 to 644.141 or any standard, rule, or regulation promulgated pursuant to Missouri Clean Water Law Section 644.006 to 644.141.

☒ Not Applicable: This operating permit is not drafted under premises of a petition for variance.

WATER QUALITY STANDARDS:
Per 10 CSR 20-7.031(4), General Criteria shall be applicable to all waters of the state at all times including mixing zones. Additionally, 40 CFR 122.44(d)(1) directs the Department to establish in each NPDES permit conditions to achieve water quality established under Section 303 of the Clean Water Act, including State narrative criteria for water quality [10 CSR 20-7.031(5)].

WASTELOAD ALLOCATIONS (WLA) FOR LIMITS:
Per 10 CSR 20-2.010(78), the amount of pollutant each discharger is allowed by the Department to release into a given stream after the Department has determined total amount of pollutant that may be discharged into that stream without endangering its water quality.

☒ Not Applicable: Wasteload allocations were not calculated. Daily maximum and monthly average limits are equal to the water quality standards for each pollutant. Because this is a Master General Permit, the calculation of WLAs for each facility discharging under this permit is beyond the scope of the permit.

WHOLE EFFLUENT TOXICITY (WET) TEST:
A WET test is a quantifiable method of determining if a discharge from a facility may be causing toxicity to aquatic life by itself, in combination with or through synergistic responses when mixed with receiving stream water.

☒ Not Applicable: At this time, the permittee is not required to conduct WET test for this facility.

305(b) REPORT, 303(d) LIST, & TOTAL MAXIMUM DAILY LOAD (TMDL):
Section 305(b) of the federal Clean Water Act requires that each state identify waters that are not meeting water quality standards and for which adequate water pollution controls have not been required. Water quality standards protect such beneficial uses of water as whole body contact (such as swimming), maintaining fish and other aquatic life, and providing drinking water for people, livestock and wildlife. The 303(d) list helps state and federal agencies keep track of waters that are impaired but not addressed by normal water pollution control programs. It is a part of the 305(b) report.

A TMDL is a calculation of the maximum amount of a given pollutant that a body of water can absorb before its water quality is affected. If a water body is determined to be impaired as listed on the 303(d) list, then a watershed management plan will be developed that shall include the TMDL calculation. Applications for coverage under Master General Permits in the watersheds of bodies of water with a TMDL are evaluated on a case by case basis. Waters with approved TMDLs are listed as part of the 305(b) report.

Part V – Effluent Limits Determination

Effluent limitations derived and established in the below Effluent Limitations Table are based on current operations of the facility.

EFFLUENT LIMITATIONS FOR TABLE A:

PARAMETER	Unit	Basis for Limits	Daily Maximum	Weekly Average	Monthly Average	Modified	Previous Permit Limitations
Flow	mgd	1	*		*	No	
Chlorides	mg/L	2,3	557		277	No	
Chlorides + Sulfate	mg/L	1,3	1000		1000	No	
Settleable Solids	mL/L	2	1.5		1.0	No	
Copper, Total Recoverable	mg/L	2, 3	0.022		0.011	No	22/11 µg/L
Lead, Total Recoverable	mg/L	2, 3	0.01		0.005	No	10/5 µg/L
pH – Units	SU	2	6.5-9.0		6.5-9.0	No	

* - Monitoring requirement only.

Basis for Limitations Codes:

1. State or Federal Regulation/Law
2. Water Quality Standard (includes RPA)
3. Water Quality Based Effluent Limits
4. Lagoon Policy
5. Ammonia Policy
6. Antidegradation Review
7. Antidegradation Policy
8. Water Quality Model
9. Best Professional Judgment
10. TMDL or Permit in lieu of TMDL
11. WET Test Policy

DERIVATION AND DISCUSSION OF LIMITS:

- **Flow**. In accordance with 40 CFR Part 122.44(i)(1)(ii), the volume of effluent discharged from each outfall is needed to assure compliance with permitted effluent limitations. If the permittee is unable to obtain effluent flow, then it is the responsibility of the permittee to inform the Department, which may require the submittal of an operating permit modification.

- **Chlorides**. 10 CSR 20-7 Table A. Protection of aquatic life 230 mg/L chronic (LTA_c), 860 mg/L acute (LTA_a). Effluent limitations were revised during the 2013 renewal from previous state operating permit due to the fact that the hardness dependent standards put into water quality standards was not approved by EPA. No changes were made to this limit during the current permit modification.

  LTA_c = 230 mg/L (0.780) = 179 mg/L [CV = 0.6, 99th Percentile, 30 day avg.]
  LTA_a = 860 mg/L (0.321) = 276 mg/L [CV = 0.6, 99th Percentile]

  Use most protective number of LTA_c or LTA_a.

  MDL = 179 mg/L (3.11) = 557 mg/L [CV = 0.6, 99th Percentile]
  AML = 179 mg/L (1.55) = 277 mg/L [CV = 0.6, 95th Percentile, n =30]

- **Chlorides + Sulfates**. Effluent limitations have been retained from previous state operating permit. Limits remain at 1,000 mg/L required per 10 CSR 20-7.031(4)(L).

- **Settleable Solids**. Effluent limitations have been retained from previous state operating permit.

- **Metals**. Effluent limitations for total recoverable metals were developed using methods and procedures outlined in the "Technical Support document for Water Quality-based Toxic Controls" (EPA/505/2-90-001) and "The Metals Translator: Guidance for Calculating a Total Recoverable Permit Limit from a Dissolved Criterion" (EPA823-B-96-007). General warm-water fishery criteria apply and a water hardness of 162 mg/L, which is the statewide average, is used in the conversion below.

METAL	CONVERSION FACTORS	
	ACUTE	CHRONIC
Lead	0.721	0.721
Copper	0.960	0.960

Conversion factors for Lead and Copper are hardness dependent. Values calculated using equation found in Section 1.3 of EPA 823-B-96-007 and hardness = 162.0 mg/L.

- **Lead, Total Recoverable:** Protection of Aquatic Life: Chronic Criteria = 4.24 µg/L, Acute Criteria = 108.69 µg/L.
  Acute WQS = 108.69 ÷ 0.721 = 150.75 µg/L
  Chronic WQS = 4.24 ÷ 0.721 = 5.88 µg/L

  Acute WQS: C_e = WQS = 150.82 µg/L
  Chronic WQS: C_e = WQS = 5.88 µg/L

  LTA_a = 150.75 µg/L * (0.321) = 48.39 µg/L [CV = 0.6, 99th Percentile]

  LTA_c = 5.88 µg/L * (0.527) = 3.10 µg/L [CV = 0.6, 99th Percentile]

  Use most protective number of LTA_a or LTA_c.

  MDL = 3.10 µg/L * (3.11) = **9.64 µg/L** [CV = 0.6, 99th Percentile]

  AML = 3.10 µg/L * (1.55) = **4.81 µg/L** [CV = 0.6, 95th Percentile, n = 4]

- **Copper, Total Recoverable:** Protection of Aquatic Life Chronic Criteria = 13.5 µg/L, Acute Criteria = 21.2 µg/L.

  Acute WQS = 21.2 ÷ 0.96 = 22.08 µg/L
  Chronic WQS = 13.5 ÷ 0.96 =14.06 µg/L

  Acute WLA: C_e = WQS = 22.08 µg/L
  Chronic WLA: C_e = WQS = 14.06 µg/L

  LTA_a = 22.08 * (0.321) = 7.09 µg/L [CV = 0.6, 99th Percentile]

  LTA_c = 14.09 * (0.527) = 7.41 µg/L [CV = 0.6, 99th Percentile]

  Use most protective number of LTA_a or LTA_c.

  MDL = 7.09 * (3.11) = **22.04 µg/L** [CV = 0.6, 99th Percentile]

  AML = 7.09 * (1.55) = **10.98 µg/L** [CV = 0.6, 95th Percentile, n = 4]

- **pH**. Effluent limitation range is ≥ 6.5 or 6.5 – 9.0 Standard pH Units (SU), as per the applicable section of 10 CSR 20-7.031(5)(E) and is retained from the previous version of this permit. pH is not to be averaged.

- **Radioactive Material**.

The **Atomic Energy Act of 1946** (Public Law 79-585) determined how the United States federal government would control and manage the nuclear technology it had jointly developed with its wartime allies (Britain and Canada). Most significantly, the Act ruled that nuclear weapon development and nuclear power management would be under civilian, rather than military control, and it established the United States Atomic Energy Commission for this purpose.

The **Atomic Energy Act of 1954 (**Public Law 83-703) covered the laws for the development, regulation, and disposal of nuclear materials and facilities in the United States.

The **Energy Reorganization Act of 1974** (Public Law 93-438) established the Nuclear Regulatory Commission. Under the Atomic Energy Act of 1954, a single agency, the U.S. Atomic Energy Commission, had responsibility for the development and production of nuclear weapons and for both the development and the safety regulation of the civilian uses of nuclear materials. The Act of 1974 split these functions, assigning to the Energy Research and Development Administration (now the United States Department of Energy) the responsibility for the development and production of nuclear weapons, promotion of nuclear power, and other energy-related work, and assigning to the NRC the regulatory work, which does not include regulation of defense nuclear facilities.

10 CSR 20-7.031(5)(I) states:
All streams and lakes shall conform to state and federal limits for radionuclides established for drinking water supply.
This permitting requirement is a specific criterion for radioactive materials contained within the Water Quality Standards. Historical research found that this requirement was filed on May 13, 1977 and became effective December 11, 1977 and has not been changed.

As noted above the Energy Reorganization Act of 1974 assigned the responsibility for safety regulation of radioactive materials to the Nuclear Regulatory Commission. At the time individual states had the option of becoming “delegated states” and could assume the responsibilities of implementing safety regulation for radioactive materials. The State of Missouri declined the option to become a “delegated state.” In 1977 when this code was promulgated, as a non-delegated state, the legislature did not feel that it had the authority to develop specific water quality standards for radioactive materials. Instead the legislature, in order to protect human health, adopted by reference federal or state drinking water supply standards.

The **Safe Drinking Water Act** of 1974 (Public Law 93-438) was intended to ensure safe drinking water for the public. Pursuant to the act, the United States Environmental Protection Agency (EPA) was required to set standards for drinking water quality and oversee all states, localities, and water suppliers who implement these standards. In 1976 the EPA promulgated requirements for Radium 226/228, Gross Alpha, and Beta Particle and Photon Radioactivity and specified that the concentration of man-made radionuclides causing 4 millirem total body or organ dose equivalents must be calculated on the basis of 2 liter per day drinking water intake using the 168 hour data list in “Maximum Permissible Body Burdens and Maximum Permissible Concentrations of Radionuclides in Air and in Water for Occupational Exposure,” NBS (National Bureau of Standards) Handbook 69 as amended August 1963, U.S. Department of Commerce. In 2000 the Federal Drinking Water Standards for Radionuclides were changed to include Uranium.

The purpose of these water softening units is to provide potable water that complies with the Safe Drinking Water Act of 1974, as amended, in its entirety, including Radionuclides. Some groundwater aquifers used to supply drinking water contain Naturally Occurring Radioactive Material (NORM), specifically Radium and Uranium, above the drinking water standard. The filter backwash from these facilities will contain Technically Enhanced Naturally Occurring Radioactive Material (TENORM).

TENORM has often been defined by what it is not, rather than what it is. It has been defined by exclusion: it is not low level waste, nor is it source, special nuclear, or byproduct material under the 1972 amendment of Atomic Energy Act of 1954. The definition of source material found in the 1972 amendment is based on the early safeguards concerns for material that could be used to ultimately make reactor fuel or nuclear weapons. When the definition was written, Congress considered that source materials needed to be placed under regulatory control on the basis of promoting common defense and national security. The health and safety impacts from NORM other than source material were considered to be manageable, to be relatively insignificant, and to have no basis for regulation from the standpoint on the common defense and national security (Decommissioning - Non-Reactor Facilities. Strategic Assessment Issue Paper. U.S. Nuclear Regulatory Commission. September 16, 1996)

TENORM, as it specifically relates to potable water supply filter backwash, falls outside the jurisdiction of the NRC, and EPA does not have any statutory requirements. The purpose of the original 1977 version of 10 CSR 20-7.031(5)(I) was to use the safe drinking water act to protect people from exposure to man-made radionuclides in a drinking water. NORM and TENORM were not considerations in the original statute, and the consequence of considering them applicable and relevant now is inappropriate. While the TENORM filter backwash is likely to be above the drinking water standard, the only situations where a general public exposure pathway could be complete is in a losing stream setting. A review of existing G641 permits shows that at present no facilities would fall into this category. Therefore instead of applying a radioactive material effluent limitation in this permit; the permit will instead not allow facilities to discharge in a karst or losing stream setting, including sinkholes and other direct conduits to ground water.

Sampling Frequency:
Sampling frequency is established in accordance with Department policy. The Department will review the last five years of Discharge Monitoring Reports submitted by facilities covered under this permit. As a result, the Department has decided not to modify the sampling frequency.

Part VI – Finding of Affordability

Pursuant to Section 644.145, RSMo, the Department is required to determine whether a permit or decision is affordable and makes a finding of affordability for certain permitting and enforcement decisions. This requirement applies to discharges from combined or separate sanitary sewer systems or publicly-owned treatment works.

☒ Not Applicable; The Department is not required to determine findings of affordability because the facility is not a combined or separate sanitary sewer system or a publicly-owned treatment works.

Part VII – Administrative Requirements

PUBLIC NOTICE OF COVERAGE FOR AN INDIVIDUAL FACILITY
The need for an individual public notification process shall be determined and identified in the general permit per 10 CSR 20-6.020(1)(C)2. Public Notice of **reissuance** of coverage is not required unless the facility has been found to be in significant noncompliance, 10 CSR 20-6.020(1)(C)4.

☒ Not Applicable; Public notice is not required for issuance of initial coverage under this Master General Permit to individual facilities. Public notice of reissuance of coverage for individual facilities is not required unless the facility has been found to be in significant noncompliance.

PUBLIC NOTICE:
On the basis of preliminary staff review and the use of applicable standards and regulations, the Department, as administrative agent for the Missouri Clean Water Commission, proposes to issue a permit(s) subject to certain effluent limitations, schedules, and special conditions contained herein and within the operating permit. The proposed determinations are tentative pending public comment.

The Department shall give public notice that a draft permit has been prepared and its issuance is pending. Additionally, public notice will be issued if a public hearing is to be held because of a significant degree of interest in and water quality concerns related to a draft permit. No public notice is required when a request for a permit modification or termination is denied; however, the requester and permittee must be notified of the denial in writing.

The Department must issue public notice of a pending operating permit or of a new or reissued statewide general permit. The public comment period is the length of time not less than thirty (30) days following the date of the public notice which interested persons may submit written comments about the proposed permit.

For persons wanting to submit comments regarding this proposed operating permit, please refer to the Public Notice page located at the front of this draft operating permit. The Public Notice page gives direction on how and where to submit appropriate comments.

☒ The Public Notice period for this operating permit began June 22, 2018, and ended July 23, 2018. No comments were received.

DATE OF FACT SHEET: JUNE 13, 2018

COMPLETED BY:
STACIA BAX
MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM, OPERATING PERMITS SECTION
573 526-4586, stacia.bax@dnr.mo.gov